

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

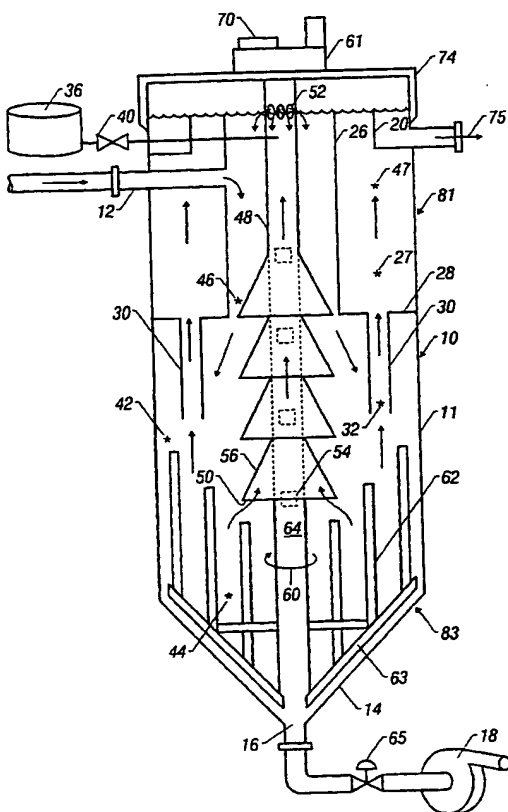
(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
15 February 2001 (15.02.2001)

PCT

(10) International Publication Number
WO 01/10530 A1

- (51) International Patent Classification⁷: **B01D 21/06**, 21/08, 21/18, 21/24, 21/28
- (72) Inventor; and
(75) Inventor/Applicant (for US only): **BEDELL, Daniel** [US/US]; 533 East Aspen Way, Centerville, UT 84014 (US).
- (21) International Application Number: **PCT/US00/20334**
- (22) International Filing Date: **26 July 2000 (26.07.2000)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data: **60/147,652** **6 August 1999 (06.08.1999)** **US**
- (71) Applicant (for all designated States except US): **BAKER HUGHES INCORPORATED** [US/US]; Suite 1200, 3900 Essex Lane, Houston, TX 77027 (US).
- (74) Agents: **POLACEK, Michael et al.**; Baker Hughes Incorporated, Suite 1200, 3900 Essex Lane, Houston, TX 77027 (US).
- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.**
- (84) Designated States (regional): **ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian**

[Continued on next page]

(54) Title: **DEEP BED THICKENER/CLARIFIERS WITH ENHANCED LIQUID REMOVAL**

(57) Abstract: The enhanced deliquifying of the compacted bed of deep bed thickener/clarifier is disclosed. Such an apparatus comprises a vessel receiving a slurry of liquid and solid particles suspended in the liquid. The vessel defines a free settling zone, a hindered settling zone intermediate, an upper clarification zone and a lower compaction zone. A deliquifying member is provided in the vessel extending up between at least two zones for facilitating the upward flow of free liquid from one of the lower zones and the settling of particulates. A rotating rake shaft with pickets are so designed to release the interstitial liquid trapped in a lower zone. The pickets provide pathways for liquid to release generally vertically. The released liquid travels upward to the deliquifying member and on into the clarification zone. The lower zone, freed of the interstitial water, further collapses becoming more concentrated or dense.

WO 01/10530 A1